

Remarks

I. Status of the claims

Claims 1, 2, 8, 14-16, 21-27 are pending. Claims 1 and 15 have been amended to recite a preferred configuration of the lasers. Support for this amendment may be found in paragraphs 24-26 and Figures 4A and 5A. Figures 4A and 5A depict a parallelogram pattern defined by θ , the acute angle between the column and the process direction.

In particular, paragraph 24 states that θ is defined as the arc tangent of the spot separation at the P/R 24 divided by r . The spot separation at the P/R may be defined as BS_{pr} (see paragraph 25), making the equation: $\theta = \arctan(BS_{pr}/r)$. Additionally, $d = BS_{pr} \times N_p$, and $BS_{pr} = d/N_p$ (see definitions in Example 3). Substituting these definitions, $\theta = \arctan(d/(r N_p))$, where d is the distance between the columns of emitters, r is the distance between rows of emitters, and N_p is the number of beams per column (see Figures 4A and 5A and paragraphs 25-26). Accordingly, no new matter has been introduced through these amendments.

II. Rejections under 35 U.S.C. § 103(a)

The examiner has made the following rejections under 35 U.S.C. § 103(a): claims 1, 2, 8, 15, 21, 25, and 26 are rejected as being unpatentable over U.S. Patent No. 6,091,537 to Sun et al. (“Sun”) in view of U.S. Patent No. 5,940,113 to Wilson (“Wilson”); claim 14 is rejected as being unpatentable over Sun in view of Wilson, further in view of U.S. Published Patent Application No. 2004/0120376 to Kwak (“Kwak”); claims 1, 15, 16, and 22-24 are rejected as being unpatentable over U.S. Patent No. 6,121,983 to Fork et al. (“Fork”) in view of Wilson; and claim 27 is rejected as being unpatentable over Fork in view of Wilson, further in view of Kwak.

In this response, Applicants have amended the independent claims to recite a preferred configuration of the lasers. In particular, the acute angle between the column and the process direction (θ) of the parallelogram pattern is defined by the following formula: $\theta = \arctan(d/(r N_p))$, wherein d is the distance between the columns of emitters, r is the distance between rows of

emitters, and N_p is the number of beams per column. Arrays arranged in a parallelogram having an acute angle between the column and the process direction that are determined through the recited formula are not taught or suggested in the references cited by the examiner.

The examiner cites Wilson as disclosing a two-dimensional VCSEL array having three rows and columns that are diagonally staggered in a parallelogram pattern. See Office Action, bridging paragraph on pages 3-4. However, Wilson does not teach or suggest a parallelogram having a vertical angle determined through the formula recited in the claimed invention. While Wilson measures the distance between the rows of emitters and the distance between the columns of emitters (see Figs. 23 and 24), Wilson does not measure the vertical angle or use this measurement to determine the arrangement of the lasers. See col. 8, line 28 to col. 9, line 5 of Wilson for the discussion relating to Figs. 23 and 24.

The other references in the rejections, Sun, Kwak, and Fork, have not been cited by the examiner as teaching an array having three rows and columns that are diagonally staggered in a parallelogram pattern. Therefore, these references could not teach an arrangement of the parallelogram having a particular vertical angle.

Accordingly, none of the references, taken alone or together, teach or suggest Applicants' claimed invention. Applicants therefore respectfully request that the examiner withdraw the rejections under 35 U.S.C. § 103(a).

III. Conclusion

Applicants respectfully request reconsideration of this application in view of the above amendments and remarks.

Except for issue fees payable under 37 C.F.R. §1.18, the Commissioner is hereby authorized by this paper to charge any additional fees during the entire pendency of this application including fees due under 37 C.F.R. §§1.16 and 1.17 which may be required,

including any required extension of time fees, or credit any overpayment to Deposit Account No. 19-2380. This paragraph is intended to be a **CONSTRUCTIVE PETITION FOR EXTENSION OF TIME** in accordance with 37 C.F.R. §1.136(a)(3).

Respectfully submitted,

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